Insourcing, Automation, Patents and the Medical Device Industry

Joe Pustka

Early this year the Washington Post reported, “In 2010, U.S. manufacturers produced nearly $1.8 trillion in goods (in constant 2005 dollars), about $100 billion more than China did.”

That might seem at odds with the constant stream of headlines about US jobs being lost overseas and various proposals, on both sides of the aisle, to boost insourcing.

The comparatively greater value of USA goods sold reflects the under-recognized story of superior USA automation and robotics on assembly lines. Probably because this “story” is more than a half-century-old and so huge and overriding, it is difficult to keep it in view.

Yes, low-cost labor works to create urinary catheters and other “low-tech” medical devices. Yes, those types of jobs have been moving overseas at a fast pace. However, the disappearing job base is also a reflection of superior engineering eliminating the jobs that used to rely on US workers’ hands, literally and figuratively. It’s not only that lower-skilled jobs have moved overseas, it’s also that the higher skill sets and mindsets needed for today’s emerging US economy have not kept pace.

The evolution of USON leak detection equipment [1] examples this trend. Nearly half a century ago, after first developing high precision leak testing methods for NASA, USON brought these techniques to commercial applications such as automotive, medical devices and a broad range of industrial applications. Over the decades the availability of lower-cost microelectronics and superior control engineering among other factors allowed USON leak detectors to facilitate faster throughputs on automated assemblies making products that required multiple leak tests. Fast forward to today and now USON’s family of leak detection equipment includes a leak detector capable of 8 concurrent tests in any combination of a dozen

varieties.

Do the math. If you deployed all 8 sensors of this new leak detector (Optima vT Leak and Flow Tester [2]) to do the same test, you'd obviously get at least 8X faster throughput on the test portion of your assembly process. Actually, it's usually more than 8X faster because each independent sensor can be tuned to a particular range at which is most efficient for the required accuracies.

Consider too that the permutations of a dozen types of possible NDT tests [3] translate into half a billion permutations on how to use that one leak detector. For the design engineering team, that means potential for very positive impacts on time-to-market for new medical device development. This is the REAL math to consider: one new instrument and more doors opening for product design innovations than can be counted.

Would we want to throw out technology innovations like Optima that speed production and get to "full employment" but by going Luddite in a big way? Obviously not!

Headlines tend to focus on our partisan divides on how to get new jobs back. No matter how you want us to get from here to there, I just ask that we ensure that the new jobs we create match the technological superiority that has been at the core of our economy since World War II.

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